

Annual Report of Accomplishments and Outcomes, July 2011 – June 2012 – *Fundamental*

Michigan State University/Michigan Department of Community Health (MDCH) /Michigan Department of Licensing and Regulatory Affairs,

Enhanced Program in Occupational Injury and Illness Surveillance

Principal Investigator – Kenneth Rosenman, MD (517)353-1846 Rosenman@msu.edu

Coordinator – Martha Stanbury, MSPH (517)335-8364 stanburym@michigan.gov

The primary activities of the Michigan Fundamental program are:

- Annually collect data for occupational health indicators (OHIs)
- Conduct case based surveillance for work-related amputations, burns, selected metals, and carbon monoxide poisoning.
- Maintain and improve surveillance infrastructure and data systems to support surveillance systems.

MAJOR ACCOMPLISHMENTS AND OUTPUTS

1. Occupational Health Indicators

Michigan's OHI data for 2008 and 2009 were compiled and submitted to CSTE.

The OHI "How to Guide" for #10, #12 and Employment Demographics Indicators were updated.

MDCH staff participated in three OHI Workgroup conference calls and attended a roundtable on OHI's at the 2012 CSTE conference.

2. Surveillance for work-related amputations, burns, metals, and carbon monoxide poisoning Case Ascertainment – number of reports received/confirmed July 2011-June 2012:

There were 1,503 amputation reports received, of which 519 were confirmed as work-related.

There were 3,657 burn reports received, of which 1,169 were confirmed work-related.

There were 4,447 arsenic, 5,894 mercury, and 3,378 cadmium metals reports received, of which 94 were above the surveillance action levels in 68 individuals

There were 669 carbon monoxide reports received, of which 120 were confirmed as work-related.

A new condition was put under surveillance this year: skull fractures. There were 1,281 skull fracture reports received, of which 105 were confirmed work-related.

Investigations

Amputation investigations were completed at 11 facilities. The median number of violations was 1 and the median assessed fines were \$3,600.

Burn investigations were completed at 35 facilities. Twenty facilities received 55 citations with \$ 422,880 in penalties.

Skull fracture investigations were completed at six facilities. Four facilities received 32 citations with \$13,300 in penalties.

3. Surveillance infrastructure

We continued to maintain the web-based occupational disease (OD) reporting system and the availability of the toll free number for phone reporting. We continued to receive reports through the automated occupational disease reporting system which has been developed for the electronic medical record.

We continued to promote and remind health care providers of the reporting requirement through our quarterly newsletter, "Project SENSOR News," which has a mailing list of approximately 3,000 of which approximately 75% are physicians.

All new physicians in the state continued to receive a letter about the occupational disease reporting law and a copy of the reporting form as part of the packet they received when they applied for a Michigan License at the Bureau of Health Professions.

Two meetings were held with the MDCH program that manages the Michigan Emergency Medical Services Information System (MI-EMSIS) and other programs at MDCH with an interest in the data in order to explore opportunities to use the data for occupational health surveillance. A data request was submitted as the first step in exploring the usefulness of the data and we are waiting for a response.

Twitter and Facebook were used to disseminate materials and post advisories on occupational health issues. For example, the OSHA twitter feed on risks to outdoor workers of illness from excessive heat was "re-tweeted" during the June 2012 extreme heat wave.

We accessed the national Poison Control Center (PCC) "National Poison Data System"; approximately 2 reports were received daily.

We continued to be active in multi-state collaborations to promote occupational health surveillance. Dr. Rosenman continued to co-chair the Occupational Health Surveillance Workgroup of the Council of State and Territorial Epidemiologists. This group met in December in Orlando FL and at the annual CSTE meeting in June 2012. He also was sponsored by CSTE to attend and present at a NIOSH meeting on workers compensation. Martha Stanbury, MDCH staff, continued to serve on the Executive Board of the Council of State and Territorial Epidemiologists as Environmental/Occupational/Injury Chair until June 2012. In this last year of her tenure, among other things, she facilitated passage of a CSTE Position Statement recommending inclusion of occupation and industry as core variables in the electronic health record, submission of a set of letters to the Office of the National Coordinator on the same issue, and completion of the CSTE publication with occupational health success stories in state health departments. Abby Schwartz, MDCH pesticides coordinator, continues to chair the "SENSOR-pesticides coding committee", which coordinates multi-state issues for the expanded pesticides program.

3. Materials Development, Publications, Presentations and Other Outreach

Annual occupational disease and injury surveillance reports completed in this period (available at www.oem.msu.edu):

Work-related Amputations in Michigan, 2009

Heavy Metals Surveillance in Michigan: Fifth Annual Report (January – December 2010)

Heavy Metals Surveillance in Michigan: Sixth Annual Report (January – December 2011)

2009 Annual Report on Carbon Monoxide Poisoning in Michigan

Work-related burns in Michigan: First annual Report (January 2009 - December 2009)

A 2-page summary sheet was developed to highlight key elements of condition specific surveillance data (available at www.oem.msu.edu):

Tracking Work-Related Burns in Michigan (December 20, 2011).

Tracking Carbon Monoxide in Michigan (September 19, 2011).
Heavy Metals Surveillance in Michigan (September 19, 2011).
Tracking Work-Related Skull Fractures in Michigan (February 9, 2012).

NIOSH e-News, March 2012: Work-Related Burns Identified. Available at:
<http://www.cdc.gov/niosh/enews/enewsv9n11.html#news>

Abstracts and posters:

Stanbury M, Rosenman K. Work-related health disparities in Michigan. 2001 MSU Symposium on multicultural psychology: Occupational health disparities among racial and ethnic minorities: Formulating research needs and directions. E. Lansing MI, Sept 22-23, 2011.

Stanbury M, Rosenman K. Work-related health disparities in Michigan. Poster presented at the annual meeting of the epidemiology section of the Michigan Public Health Association. April 2012.

Peer reviewed publications:

Kica J, Rosenman, KD: Multisource Surveillance System for Work-Related Burns, J Occup Environ Med. 2012; 54: 642-647.

Presentations:

Kica J, Rosenman KD. Tracking 2009 Work-Related Burns in Michigan at the 5th National Occupational Injury Research Symposium (NOIRS) in Morgantown, October 2012.

Rosenman KD, Kica J, Largo T. Completeness of Workers' Compensation Data in Identifying Work-Related Injuries. Use of Workers' Compensation Data for Occupational Safety and Health Washington, DC, June 19 – 20, 2012

Maile M, Rosenman KD. Tracking Unintentional Carbon Monoxide Poisoning in Michigan. Annual CSTE Meeting, Omaha, Nebraska, June 3-6, 2012

Kica J, Rosenman KD. Multi-Source Surveillance System for 2010 Work-Related Skull Fractures in Michigan. Annual CSTE Meeting, Omaha, Nebraska, June 3-6, 2012

Potential Outcomes

All reports and presentations listed above contained recommendations that if implemented would reduce work related fatalities and morbidity.

Intermediate Outcomes

Referrals of worksites identified by occupational disease/injury reports to MIOSHA resulted in worksite inspections that identified hazards which, when corrected, will prevent additional work-related disease/injury.

Increased awareness and recognition of work-related diseases and injuries by physicians improved secondary prevention activities including early diagnosis and treatment and occupational disease reporting.

Multi-year efforts to improve surveillance systems in Michigan (e.g., using MIEMIS for occupational surveillance) and nationally (e.g. efforts to capture occupation and industry in electronic health records), while not yet completed, will ultimately result in better surveillance data which will be used to prompt preventive interventions.

Annual Report of Accomplishments and Outcomes, July 2011 – June 2012 – *Acute Traumatic Work-Related Deaths*

Michigan State University/Michigan Dept of Community Health/Michigan Dept of Licensing and Regulatory Affairs, Enhanced Program in Occupational Injury and Illness Surveillance
Principal Investigator – Kenneth Rosenman, MD (517)353-1846 Rosenman@msu.edu
Coordinator – Debra A. Chester, (517)432-1008 debra.chester@ht.msu.edu

The primary activities of the Michigan Acute Traumatic Work-Related Death program are:

- Conducting surveillance for acute traumatic work-related deaths,
- Identifying the root cause(s) of the death, and
- Conducting prevention activity through workplace investigations and the development and dissemination of educational material.

MAJOR ACCOMPLISHMENTS AND OUTPUTS

Case Ascertainment

There were 128 work-related fatality reports received, with 116 confirmed.

Investigations

There were five MIFACE site visits performed; three of the five on-site investigations involved fatalities occurring prior to July 1, 2011.

Materials Development, Publications and Presentations

1. 2010 Annual Report on Acute Traumatic Work-Related Fatalities in Michigan. www.oem.msu.edu.
2. A 2-page summary sheet highlighting key elements of the Acute Traumatic Work-Related Death Surveillance Program in MI: Tracking Acute Work-Related Deaths in MI (www.oem.msu.edu.)
3. Worker Memorial Day Activities (April 28, 2012)
4. A Worker Memorial Day press release was prepared. MSU Press Release was highlighted in the print and Internet publications and during radio interviews by Dr. Rosenman. Ms. Chester was a member of the planning committee and one of the featured speakers at the State Worker Memorial Day Event in Wentworth Park on April 26, Lansing, MI
5. Forty seven Summaries of MIOSHA Investigations were prepared and distributed (www.oem.msu.edu). These Summaries were written for educational purposes and have been used in MIOSHA and company training programs and “tailgate talks” on the worksite.
6. Hazard Alert was developed -Methylene Chloride Causes Death of Three Michigan Bathtub Refinishers.
7. Nine in-depth investigation reports have been posted to the MSU OEM website www.oem.msu.edu.
8. MIFACE materials were distributed at eight conferences:
 - a. MSU Ag Expo, July 20-22, 2011, East Lansing, Michigan.
 - b. Michigan Safety Conference, April 17-18, 2012, Grand Rapids, MI,
 - c. Michigan Assoc of Osteopathic Family Physicians Conf, Aug 4-7, 2011, Traverse City, MI.
 - d. American College of Physicians Conference, September 8-10, 2011, Grand Rapids, MI.
 - e. MI Occup & Environ Medicine Assoc 2011 Conference, Sept 23-24, 2011, Bay City, MI.
 - f. Univ of Michigan Pulmonary & Critical Care Med Conf, Sept 29-30, 2011, Ann Arbor, MI.
 - g. Michigan Academy of Physician Assistants Conf, October 13-16, 2011, Traverse City, MI.
 - h. 2011 Michigan State Medical Society Annual Conference, October 26-29, 2011, Troy, MI.

9. Presentations:
 - a. *Work-Related Fatalities. Homicides.* Citizens Insurance, Howell MI, August 12, 2011
 - b. *MIFACE and MIOSHA Collaboration.* Presented to the MIOSHA Construction Safety & Health Division quarterly meeting, Lansing MI, December 14, 2011
 - c. *FACE investigation of Methylene Chloride Death,* State SBS mtg, Orlando, FL, Dec 6, 2011
 - d. *How Hazardous is Agriculture?* MI Agribusiness Assoc Ann Conf, Lansing, MI Jan 10, 2012
 - e. *MIFACE 2010 Update - Agriculture.* Presentation to farmers and agricultural support personnel at Jonesfield Township Hall, Merrill, Michigan, January 12, 2012
 - f. *How Hazardous is Agriculture?* Revised presentation to Grain Elevator and Processing Society (GEAPS) at Cabela's, Dundee, Michigan. January 24, 2012
 - g. Farm Bureau/MIFACE Farm Safety Presentations(8):
 - Feb 27, 2012: Macomb Cty, Mar 7, 2012, Monroe Cty; Mar 8, 2012, Eaton Cty; Mar 14, 2012: Osceola/Lake/Wexford/Missaukee Counties; Mar 15, 12: Grand Traverse/Leelanau Counties; Mar 16, 2012: Bay Cty; April 11, 2012: Ottawa Cty
 - h. *How Hazardous is Agriculture?* GEAPS Regional Meeting, Angola, IN, March 29, 2012
 - i. *MIFACE: FACE a Safer Future.* Michigan Industrial Hygiene Society (MIHS) Past-President's Breakfast, Schoolcraft College, Livonia, MI. March 29, 2012
 - j. *What Went Wrong? Real Life Examples.* MI Safety Conf A, Grand Rapids, MI. Apr 17, 2012.
10. **Chester D, Rosenman K,** Grimes G, Fagan K, Castillo D. Fatal Exposure to Methylene Chloride Among Bathtub Refinishers – United States, 2000-2011. MMWR February 24, 2012; 61:119-122.
11. Established relationship with the MI Public Services Commission to interview their investigators when a fatality falls within their jurisdiction.
12. Established relationship with the Arboriculture Society of MI (MI's Intern Soc of Arboriculture Chap).
13. Chaumont Menendez C, Castillo D N, **Rosenman KD,** Harrison RJ, Hendricks S. Evaluation of a Nationally Funded State-based Program to Reduce Fatal Occupational Injuries. *Occup Environ Med* 2012 (in press).

Special Projects

1. Collaboration with National Truckers Insurance Services Group, Inc (NTSIG)/National Trucking Association: The Director of the National Trucking Assoc contacted MIFACE after receiving the MIFACE Investigation Report #09MI085 to indicate interest in working with MIFACE and the other NIOSH FACE states to disseminate information on trucking fatalities to their 18,000 members.
2. Bathtub Refinisher Outreach. Three bathtub refinishers who were using a methylene chloride product died; one in 2006 and two in 2010. Outreach efforts included:
 - a. Contact with Director of Professional Bathtub Refinishers Association of America (PBRA). Director agreed to review report and disseminate final report to membership.
 - b. Letter to 3M regarding outreach to bathtub refinishers using Tal-Strip II Aircraft Coating Remover containing methylene chloride as stripping agent.
 - c. MIOSHA Distribution of Report and Hazard Alert
 - i. MIOSHA Outreach to 4,000+ subscribers to their e-mail list that highlighted methylene chloride overexposure, the MIFACE Investigation Report and Hazard Alert (with direct links) and encouragement to post the MIFACE materials.
 - ii. MIOSHA placed Hazard Alert on their MIOSHA Spotlight section on home page
 - iii. MIOSHA incorporated both publications in their construction training curriculum at the MIOSHA Training Institute at Macomb Community College.
 - d. Article in the November 2011 OSHA's e-mail Newsletter
 - e. Contact with California DPH, Occ Health Branch which is developing a Hazard Alert ("inspired by the Michigan FACE publication")

- f. E-mail responses from both MIFACE and MIOSHA outreach: Requests for pictures to be used for training purposes and requests to be added to MIFACE e-mail list for future reports
 - g. Bathtub Refinisher Hazard Alert was posted to the eLCOSH site and sent out to their network of trainers
 - h. U-tube video of methylene chloride bathtub refinishing deaths. In June 2012, Ms. Chester attended a Center for Digital Storytelling workshop to learn how to compose and edit.
3. Co-chair of new Agricultural Safety Section of the 2011 Michigan Safety Conference. Responsibilities included agenda development, speaker procurement and follow-up.

Potential Outcomes: All reports and presentations listed above contained recommendations that if implemented would reduce work-related fatalities and morbidity.

Intermediate Outcomes: A new MIOSHA Agency Instruction regarding interaction was jointly developed. MIOSHA compliance officers now distribute to employers the MIFACE reports, summaries and Hazard Alerts applicable to the work operation.

Extensive media response to bathtub refinisher article, over 200 national press uptakes, Feedback from bathtub refinishers in response to the methylene chloride/bathtub refinisher investigation report response postcards indicate a change in both product use to a non-methylene-chloride based product and personal protective equipment use.

MIFACE written materials have been cited in several publications and used by organizations in their educational outreach materials: MIFACE work-related fatality statistics were cited by the MIOSHA Consultation, Education and Training (CET) Division to educate prospective CET grantees about the Michigan industries and occupations with a high fatality rate to be used during their Request for Proposal response. MIOSHA use of Investigation Reports and Summaries of MIOSHA investigations in the MIOSHA Training Institute materials.

Fire fighters use of training materials: MIFACE had previously sent Investigation Report #09MI009 – *Construction Worker Pinned Under Tire of Articulated Machine* to the Director of the Office of Fire Fighter Training (OFFT) in the Michigan Department of Licensing and Regulatory Affairs (LARA). The report was presented at the Michigan Fire Fighters Training Council meeting on October 21, .The OFFT Director sent an e-mail to all Fire Service Coalition Members informing them of the posting of the report on the Bureau of Fire Services/State Fire Marshal: http://www.michigan.gov/lara/0,4601,7-154-28077_42271---,00.html

Bathtub Refinishing Can Be Deadly. Building Industry Assoc of Southeastern MI, Apartment Assoc of MI. Feb 2012, 14.

Grain Journal article *How Hazardous is Agriculture* by Wayne Bauer, Safety and Security Director, Star of the West Milling Co.

Arboricultural Society of MI requested work-related fatality data involving the use of chain saws during tree cutting/trimming operations to be used by Society trainers in sponsored chain saw safety training.

End Outcomes: Since 2001, the number of work-related fatalities has decreased from 174 in 2001 to a projected 150 work-related fatalities in 2011; a reduction of 14%.This decrease may be partially attributable to MIFACE educational prevention outreach efforts.

Annual Report of Accomplishments and Outcomes, July 2011 – June 2012 – *Work-Related Asthma*

Michigan State University/Michigan Dept of Community Health/Michigan Dept of Licensing and Regulatory Affairs, Enhanced Program in Occupational Injury and Illness Surveillance
Principal Investigator – Kenneth Rosenman, MD (517)353-1846 Rosenman@msu.edu
Coordinator – Mary Jo Reilly, (517)353-4979 maryjo.reilly@hc.msu.edu

The primary activities of the Michigan Work-Related Asthma program are:

- Conducting surveillance for work-related asthma.
- Conducting prevention activity through workplace investigations and the development and dissemination of educational material.

MAJOR ACCOMPLISHMENTS AND OUTPUTS

Case Ascertainment

There were 102 reports received, with 95 confirmed.

Quarterly requests to hospitals were emailed and faxed to 134 Michigan hospitals to remind them to report select occupational diseases from hospitalizations in 2011 and 2012, as required by Michigan law.

The mechanism for obtaining WRA reports from a new source continues to be in negotiation within the Michigan Department of Community Health. The source is the Emergency Medical Services data of ambulance runs of asthma patients from work places.

Another new source to identify WRA patients was added to the surveillance activities, beginning with cases identified in January 2012. Michigan laboratories were notified that they are required to report to the State of Michigan the names of individuals who have their blood analyzed for antibodies to amylase, anhydrides, ethylene oxide, formaldehyde, isocyanates or latex. The laboratory submits a copy of the lab report of individuals having elevated IgE antibodies to any of these substances. Further information is obtained through the physician who ordered the test or the patient about the reason for the blood test. Any cases determined to have a work-related exposure in conjunction with this testing are followed up.

Investigations

There were 10 Michigan OSHA inspections completed. The type of facilities inspected and the exposures are listed below. Two hundred and two co-workers were administered a respiratory health assessment questionnaire during 9 of the 10 MIOSHA inspections; 19 co-workers with daily or weekly shortness of breath, chest tightness, wheezing or asthma since beginning to work at the facility were identified through the 202 interviews.

Company Name	Industry Type	Exposure	Reporting Yr & Source
Continental Industries	Auto Mfg	Isocyanates	2009 PR
Drake's Batter Mix Co.	Food Products Mfg	Flour dust	2011 HDC
Formsprag Clutch (Altra Industrial Motion)	Clutch Mfg	Soy-based MWF	2010 PR
Leelanau Fruit Co.	Cherry Processing	Bleach	2010 HDC
Mitsuba/CME Corp	Auto Mfg	Plastic & metal powder in armature area	2011 WC

Company Name	Industry Type	Exposure	Reporting Yr & Source
Paulstra CRC	Rubber Products Mfg	Paint fume	2011 PR
Sellner-Behr Corp.	Auto Parts Mfg	Sanding Area	2011 PR
TAC Manufacturing	Auto Parts Mfg	Wood Finishing Dept	2011 PR
Wolverine World Wide	Shoe & Boot Mfg	Unknown	2011 PR
Zehnder's Splash Village	Indoor Waterpark	Chlorine & chloramines	2011 PC

*PR=physician referral; HDC=hospital discharge data; ICFU=index case follow up; WC=department of labor (workers' comp); MSHA=mine safety and health administration; PC=poison control center

Materials Development, Publications, Presentations and Other Outreach

- 2010 Annual Report on WRA in Michigan. Summarizes the agents, occupations and industries of the confirmed, work-related asthma cases: www.oem.msu.edu.
- Work-Related Asthma: An Overlooked Trigger. Annual meeting, Michigan Physician's Assistants Association, Traverse City, October 12, 2011.
- Update on Occupational Disease Surveillance in Michigan. MIOSHA General Industry Safety and Health Field Inspectors, Lansing, January 11, 2012.
- A 2-page summary sheet that highlights key elements of the Work-Related Asthma Surveillance Program in MI was updated: Tracking Work-Related Asthma in MI (February 23, 2012).
- The following issues of *P.S. News* were written and distributed to approximately 3,000 health professionals (available at www.oem.msu.edu):
 - Fall 2011, "Work-Exacerbated Asthma."
 - Spring 2012, "Chemical/Dust Irritants and Lung Disease."
 - Summer 2012, "Updated Software for Use with a Peak Flow Meter to Evaluate Patients Whose Asthma Symptoms are Worse at Work."
- Banga A, Reilly MJ, Rosenman KD. A Study of the Characteristics of MI Workers with Work-Related Asthma from Exposure to Welding Fumes. *J Occup Environ Med* 2011; 53:415-419.
- Banga A, Reilly MJ, Rosenman KD. Work Up And Management Of Work Related Asthma: How Are We Doing? American Thoracic Society, San Francisco, California, May 18-23, 2012.
- Rosenman KD, Bourdeau N, Cartier A. Assessment of the Worker. Eds Bernstein DI, Bernstein IL, Chan-Yeung M, Malo JL. 4th Edition Asthma in the Workplace. Informa Healthcare. 2012 (in press).
- The Work-Related Injury and Illness educational display booth was exhibited at:
 - The Michigan Association of Osteopathic Family Physicians Conference, August 4-7, 2011, Traverse City, Michigan. There were 233 attendees.
 - The American College of Physicians Conference, September 8-10, 2011, Grand Rapids, Michigan. There were over 50 attendees.
 - The MI Occupational & Environmental Medicine Association 2011 Conference, September 23-24, 2011, Bay City, Michigan. There were 77 attendees.
 - The University of Michigan Pulmonary and Critical Care Medicine Conference, September 29-30, 2011, Ann Arbor, Michigan. There were 75 attendees.
 - The Michigan Academy of Physician Assistants Conference, October 13-16, 2011, Traverse City, Michigan. There were 469 attendees.
 - The 2011 Michigan State Medical Society Annual Conference, October 26-29, 2011, Troy, Michigan. There were 529 attendees.
 - The 2012 Michigan Safety Conference, April 17-18, 2012, Grand Rapids, MI. There were approximately 1800 attendees.
- Dr. Rosenman and staff continue to be members of the Michigan Asthma Advisory Committee (MAAC) and Steering Committee, and participate in meetings for the Asthma Initiative of Michigan (AIM). Dr. Rosenman was Chair of the MAAC. Most recent meetings were 3-6 and 5-31-2012.
- The Surveillance Center at MSU maintains accounts on Facebook (11 posts from July 2011

through June 2012) and Twitter (11 tweets from July 2011 through June 2012).

12. The WRA section of the State's website on asthma: www.getasthmahelp.org was updated.
13. Presentation: Occupational and Environmental Lung Disease, Annual Scientific Meeting of the Michigan Thoracic Society, Novi, April 27, 2012.

Special projects

1. **Assess Trends in Use of Temporary Employees:** We identified 397 agencies that place employees in temporary positions in Michigan. A cover letter and survey were developed to collect information from each agency about: industries and jobs covered, training topics and format, language barriers, safety and health assessment at job locations, accident investigations, staffing hours filled and other topics. The 397 temporary employment agencies were emailed (255) or mailed (142) a link to an on-line survey instrument on June 1st, 2012. Reminder emails were sent on June 15th, 2012. To date, there have been 35 completed surveys. As of February 2011 there were 94,900 individuals in Michigan listed in NAICS category 561320 Temporary Help Services. The information learned through this initiative can potentially benefit the safety and health of these 90,000+ individuals.
2. Michigan along with the other WRA states has proposed to add WRA as a new occupational indicator. This indicator would be based on the **BRFSS survey**.
3. In response to a letter from Dr. Howard, Dr. Rosenman has joined the NIOSH **Health Care Services Sector** group to work on guidelines for safe cleaning to minimize the adverse health effects to workers, particularly from disinfectants.
4. **Barriers to Reporting Occupational Diseases Project:** Letters were sent to 101 Michigan Allergists and 402 Michigan Thoracic Physicians in July 2011 to share the results of barriers to reporting occupational diseases. Top concerns were awareness of the reporting requirement, confidentiality and unfamiliarity with the mechanisms to report a patient to the state.
5. **Zimek Disinfecting Process:** MSU completed an assessment of the two ambulance companies in Michigan that used the same Zimek disinfectant process that was used in NJ. We interviewed 31 employees at the two main facilities and one satellite location in August 2011 about their breathing health; no employees had any symptoms suggestive of asthma.

Potential Outcomes—

- All reports and presentations listed above contain recommendations that if implemented would reduce work-related asthma.

Intermediate Outcomes—

- The 10 MIOSHA Enforcement inspections benefitted the employees exposed to asthma-causing substances in the following ways: 1) Health and safety violations must be corrected, which led to an overall safer and healthier work environment. 2) Letters to the 19 symptomatic individuals identified through the co-worker interviews directed these individuals to a physician for follow-up for their breathing symptoms.
- There were over 3,200 attendees at the 7 Conferences where we exhibited the occupational and environmental display booth. Attendees who visited the booth had the opportunity to learn more about WRA and other work-related disease, and take home literature on these topics as well as speak with a staff member from our office.

End Outcomes—

- There has been a decrease in the number of individuals in Michigan with WRA caused by diisocyanates (since 1994), metal-working fluids (since 1992) and low molecular weight agents (since 2000). The Michigan Surveillance program was instituted in 1988 and has spent considerable effort in outreach to companies, physicians and employees in addressing work-related asthma caused by these substances. Outreach has been through both enforcement investigations as well as through educational media.

Annual Report of Accomplishments and Outcomes, July 2011 – June 2012 – *Silicosis and Other Work-Related Lung Diseases*

Michigan State University/Michigan Dept of Community Health/Michigan Dept of Licensing and Regulatory Affairs, Enhanced Program in Occupational Injury and Illness Surveillance
Principal Investigator – Kenneth Rosenman, MD (517)353-1846 rosenman@msu.edu
Coordinator – Mary Jo Reilly, (517)353-4979 maryjo.reilly@hc.msu.edu

The primary activities of the MI Silicosis and Other Work-Related Lung Diseases program are:

- Conducting surveillance for silicosis and initiate surveillance for other work-related lung disease, including asbestosis, work-related hypersensitivity pneumonitis, hard metal lung disease, the minor pneumoconioses, and other emerging work-related lung diseases.
- Conducting prevention activity through workplace investigations and the development and dissemination of educational material.

MAJOR ACCOMPLISHMENTS AND OUTPUTS

Case Ascertainment

There were 831 reports received and confirmed as: 7 Silicosis; 2 Coal Workers' Pneumoconiosis; 1 Hard Metal Lung Disease; 1 Pneumoconiosis, Unspecified; 683 Asbestosis; 10 Hypersensitivity Pneumonitis; 127 Other Lung Diseases (includes chronic beryllium disease, chemical pneumonitis, chemical irritation, irritative bronchitis, other pneumoconioses, smoke inhalation, silo-related lung disease).

Beginning with calendar year 2011 hospital discharge cases, we are conducting follow up interviews of any asbestosis cases younger than age 50 at the time of hospital visit. We are interviewing these more recent cases to determine if there are current exposures to asbestos among these cases.

Quarterly requests to hospitals were emailed and faxed to 134 Michigan hospitals to remind them to report select occupational diseases from hospitalizations in 2011 and 2012, as required by Michigan law.

Investigations

4 Michigan OSHA inspections were completed and are listed below:

Company Name	Industry Type	Exposure	Reporting Yr & Source
Brush Wellman	Produces beryllium and beryllium oxide	Beryllium	2010 PR
Carbide Specialties— 2 locations	Carbide Tool Mfg	Cobalt	2011 HDC
Flat Rock Bagging	Blast Cleaning Equip Mfg	Silica	2011 HDC

*PR=physician referral; HDC=hospital discharge data

Materials Development, Publications and Presentations

1. Rosenman KD, Reilly MJ, Kalinowski D. 19th Annual Report on Silicosis in Michigan. February 17, 2012. www.oem.msu.edu
2. 2010 Annual Summary of Occupational Disease Reports to the Michigan Department of Licensing and Regulatory Affairs (*in press*). www.oem.msu.edu.
3. A 2-page summary sheet that highlights key elements of the MI Work-Related Lung Diseases Surveillance Program was updated: Tracking Work-Related Lung Diseases in MI (5-21-2012).
4. The following issues of *P.S. News* were written and distributed to approximately 3,000 health professionals (available at www.oem.msu.edu):

- a. Fall 2011, "Work-Exacerbated Asthma."
 - b. Spring 2012, "Chemical/Dust Irritants and Lung Disease."
 - c. Summer 2012, "Updated Software for Use with a Peak Flow Meter to Evaluate Patients Whose Asthma Symptoms are Worse at Work."
5. Presentation: Update on Occupational Disease Surveillance in Michigan. MIOSHA General Industry Safety and Health Field Inspectors, Lansing, January 11, 2012.
6. Makol A, Reilly MJ, Rosenman KD. Prevalence of Connective Tissue Disease in Silicosis. Am J Ind Med 2011; 54:255-262.
7. Rosenman KD. Rheumatoid Arthritis and Pneumoconiosis (Letter). Am J Resp Crit Care Med 2012; 185:1024.
8. Rosenman KD. Talc. Patty's Toxicology, 6th Edition, eds. Bingham E and Cohrssen B. Hoboken, New Jersey: John Wiley and Sons 2012 (in press).
9. The Work-Related Injury and Illness educational display booth was exhibited at:
 - a. The Michigan Association of Osteopathic Family Physicians Conference, August 4-7, 2011, Traverse City, Michigan. There were 233 attendees.
 - b. The American College of Physicians Conference, September 8-10, 2011, Grand Rapids, Michigan. There were over 50 attendees.
 - c. The MI Occupational & Environmental Medicine Association 2011 Conference, September 23-24, 2011, Bay City, Michigan. There were 77 attendees.
 - d. The University of Michigan Pulmonary and Critical Care Medicine Conference, September 29-30, 2011, Ann Arbor, Michigan. There were 75 attendees.
 - e. The Michigan Academy of Physician Assistants Conference, October 13-16, 2011, Traverse City, Michigan. There were 469 attendees.
 - f. The 2011 Michigan State Medical Society Annual Conference, October 26-29, 2011, Troy, Michigan. There were 529 attendees.
 - g. The 2012 Michigan Safety Conference, April 17-18, 2012, Grand Rapids, MI. There were approximately 1800 attendees.
10. The Surveillance Center at MSU maintains accounts on Facebook (11 posts from July 2011 through June 2012) and Twitter (11 tweets from July 2011 through June 2012).
11. Presentation: Occupational and Environmental Lung Disease, Annual Scientific Meeting of the Michigan Thoracic Society, Novi, April 27, 2012.

Special projects

1. **Identifying Mines in Michigan with silica exposure:** In July 2011, 73 letters were sent to the MI mine companies, representing 100 mine locations. Each mine had at least one silica measurement > NIOSH REL from 1-1-2008 through 2-22-2011. Companies were offered free B-reading of employee chest x-rays. Employees with 20 or more years of employment service were eligible. Through August 2011, calls were made to the 73 companies to make sure they received the letter and to ask if they would like a free B-reading. Below is the status of the calls:

Company said they would call back later (but did not)	3
Letter returned, no new address IDd	8
Left voice mail message (co did not call back)	30
Tel # disconnected (no new # IDd)	4
No answer and not able to lv voice mail msg	8
Not interested in B reading	16
<u>Maybe interested, will call back if decide yes...</u>	<u>4 (80ees, 25ees, 2 w/unk # ees)</u>
TOTAL	73
2. **Project to Resurvey Abrasive Blasting Companies in Michigan** An abrasive blasting survey was sent in July 2011 to 404 MI companies (283 from original 1996 & 2005 surveys and 121 newly-identified companies—through internet search engines), and follow up calls to non-respondents were made from July 2011 through April 2012. Of the 177 companies that completed the survey:

No Blasting: 67 (20 from the Newly ID'd; 47 from original list)
Do Blasting: 110 (37 from the Newly ID'd, 14 use silica; 73 from original list, 31 use silica)

The 110 companies that do blasting reported the following:

Use silica:	45*
Use steel shot:	41
Use aluminum oxide:	27
Use coal slag:	23 (aka Black Beauty)
Use glass beads:	26
Use corn cobs:	18
Use crushed glass:	12
Use garnet:	8
Use Iron Oxide	3
Other media:	39**

* 19 of the 45 companies indicated that silica is the only media they use for blasting

**1 of the companies that indicated use of other media and NO silica used, noted the following: Play Sand (this was one of the Newly ID'd companies). Other media used included: Plastic (9), Silicon Carbide (3), Melon Seed (1), Baking Soda (10), Walnut Shells (15), Nickel Slag (1), Water (4), DuPont Starblast (1), Imported from Canada (1), Mineral Fine (1), Dry Ice (2), Synthetic Olivine (2), Black Slag (1), Ground Slag Shells (1)

4. **Barriers to Reporting Occupational Diseases Project:** We conducted outreach to 101 Michigan Allergists and 402 Michigan Thoracic Physicians in July 2011. Letters were sent to these groups to share the results of what we've learned about barriers to reporting occupational diseases. Top issues of concern included awareness of the reporting requirement, confidentiality and unfamiliarity with the mechanisms to report a patient to the state. We included a reporting form and brochure on how to report occupational diseases in the outreach packet to the Allergists and Thoracic physicians.

Potential Outcomes—

All reports and presentations listed above contain recommendations that if implemented would reduce silicosis and other work-related lung disease.

Intermediate Outcomes—

- The 4 MIOSHA Enforcement inspections benefitted the employees exposed to silica and other lung disease-causing substances in the following ways: 1) Health and safety violations must be corrected, which leads to an overall safer and healthier work environment.
- There were over 3,200 attendees at the 7 Conferences where we exhibited the occupational and environmental display booth. Attendees who visited the booth had the opportunity to learn more about silicosis and other work-related lung disease, and take home literature on these topics as well as speak with a staff member from our office.

End Outcomes—

- The number of cases of silicosis in Michigan has been decreasing since 1991. The Michigan Surveillance program was instituted in 1988 and has spent considerable effort in outreach to companies, physicians and employees in addressing silicosis. Outreach has been through both enforcement investigations as well as through educational media.

**Annual Report of Accomplishments and Outcomes, July 2011 – June 2012 –
*Pesticides illnesses and injuries***

Michigan State University/Michigan Dept of Community Health/Michigan Dept of Licensing and Regulatory Affairs, Enhanced Program in Occupational Injury and Illness Surveillance

Principal Investigator – Kenneth Rosenman, MD (517)353-1846 Rosenman@msu.edu

Coordinator – Abby Schwartz, MPH (517) 335-8338 schwartza@michigan.gov

The primary activities of the Michigan Pesticides illness and injury program are:

- Conducting surveillance for acute pesticide-related illness and injury.
- Conducting prevention activity through workplace investigations and the development and dissemination of educational materials.

MAJOR ACCOMPLISHMENTS AND OUTPUTS

Case Ascertainment

From July 1, 2011 through June 30, 2012, there were 106 work-related case reports received with 78 cases confirmed. There were 1,688 environmental pesticide reports received with 336 confirmed cases.

Investigations

Seven events were reported to the Michigan Department of Agriculture and Rural Development (MDARD). One was not investigated. One investigation found no evidence of pesticide drift. Three investigations led to citations being issued by MDARD and two are still being investigated. One of the cases being investigated by MDARD is also being investigated by MIOSHA.

Thirteen priority alerts were sent to NIOSH regarding cases with four or more exposed persons, or where someone was hospitalized, or because there were no violations of the pesticide label but the person became ill anyway.

Materials Development, Publications, Presentations, Awards, and Other Outreach

1. The Michigan pesticides program was a co-recipient of the Bullard-Sherwood Award. This is an award presented by NIOSH “to recognize outstanding efforts by its scientists and their partners in applying occupational safety and health research to prevent work-related injury, illness, and death”

2. Staff presented information about the surveillance program to about 30 Michigan State University Agriculture Extension and MDA Pesticide and Plant Pest Management staff in October 2011.

3. Staff attended the Conference for Michigan’s Farm Worker, Service Providers, and Growers in November 2011. About 150 registered attendees were able to see program reports and other material at our display table.

4. Staff met with representatives from the EPA in June 2012 and presented information about the pesticide surveillance program and some case examples.
5. Staff attended meetings of the Migrant Health Network at the Michigan Primary Care Association, to discuss pesticides and migrant worker exposures.
6. Letters were mailed to 30 migrant clinics in July 2011 and again in May 2012 reminding them to take an occupational/environmental history and to report any known or suspected cases of pesticide poisoning.
7. Information on pesticides was mailed to reported cases and employers as appropriate.
8. At the request of NIOSH and following a number of conference calls, we compared the list of Michigan poison center calls about work-related pesticides received by NIOSH from the American Association of Poison Control Centers (AAPCC) to our SENSOR-pesticides database. The purpose of this was to determine why there were discrepancies between the numbers of cases in the Michigan pesticides surveillance system that were reported by the Michigan Poison Center and the numbers of Michigan cases in the AAPCC database.
9. Michigan's pesticides project coordinator continued to chair the SENSOR-Pesticides coding committee and actively participated with other committee members in making revisions to the Standardized Variable Document. Staff presented information about Michigan activities at the annual SENSOR-Pesticides Winterfest meeting.
10. The Pesticide Advisory Committee (PAC) for the MDARD also serves as the advisory committee to the pesticide surveillance program. It met quarterly. A summary update of the pesticide surveillance system has been provided at each meeting.
11. Staff participated on the MDCH Bed Bug Working Group to advise on pesticide related issues. MDCH has been awarded a bed bug education and outreach grant from the EPA.
12. Staff provided information about pesticide exposures in the home for use in developing the Healthy Homes Strategic Plan for the State of Michigan.

13. Publications

Lee SJ, Mehler L, Beckman J, Diebolt-Brown B, Prado J, Lackovic M, Waltz J, Mulay P, **Schwartz A**, et al. Acute Pesticide Illnesses Associated with Off-Target Pesticide Drift from Agricultural Applications — 11 States, 1998–2006. *Environ Health Perspect* doi:10.1289/ehp.1002843

Jacobson J, Wheeler K, Hoffman R, Mitchell Y, Beckman J, Mehler L, Mulay P, **Schwartz A**, Langley R, Diebolt-Brown B, Prado JB, Newman N, Calvert GM, Hudson N. Acute Illnesses Associated With Insecticides Used to Control Bed Bugs — Seven States, 2003–2010 *MMWR* September 23, 2011 / Vol. 60 / (37); 1269-1274

Mehler L, Beckman J, Badakhsh R, MPH, Diebolt-Brown B, **Schwartz A**, Higgins S, Gergely R, Calvert GM, Hudson N. Acute Illness and Injury from Swimming Pool

Disinfectants and Other Chemicals --- United States, 2002—2008 MMWR October 7, 2011 / 60(39); 1343-1347.

Kasner EJ, Keralis JM, Mehler L, Beckman J, Bonnar-Prado J, Lee S-J, Diebolt-Brown B, Mulay P, Lackovic M, Waltz J, **Schwartz A**, Mitchell Y, Moraga-McHaley S, Roisman R, Gergely R, Calvert GM. Gender Differences in Acute Pesticide-Related Illnesses and Injuries Among Farmworkers in the United States, 1998–2007. Am J Ind Med 55:571–583 (2012)

Schwartz A, Walker R, Sievert J, Calvert GM, Tsai RJ. Occupational Phosphine Gas Poisoning at Veterinary Hospitals from Dogs that Ingested Zinc Phosphide — Michigan, Iowa, and Washington, 2006–2011. MMWR / April 27, 2012 / 61(16); 286-288.

The eighth annual pesticides surveillance report: Pesticide Illness and Injury Surveillance in Michigan: 2010. Published March 2012. Available at: http://www.michigan.gov/mdch/0,4612,7-132-54783_54784-127397--,00.html

Potential Outcomes

All reports and presentations listed above contained recommendations that if implemented would reduce work related fatalities and morbidity.

Intermediate Outcomes

Staff provided information about pesticide exposures in the home for use in developing the Healthy Homes Strategic Plan for the State of Michigan.

Exposure stories provided in the October training to MSU extension staff, as well as through the annual report, were used in training pesticide applicators.

Thirteen priority reports were sent to NIOSH this year. NIOSH refers them to the EPA where they may be considered during pesticide re-registration evaluations.

End Outcomes

Our data sources have changed over the years. For example, when Michigan had a full Hazardous Substances Emergency Event Surveillance (HSEES) program many cases were referred to the pesticide surveillance program. Now that HSEES has been scaled back due to a lack of funding, many fewer cases are identified through HSEES. This year (2012) we expanded the potential case ascertainment for poison control cases and many more reports are coming from poison control than in previous years. Given these changes we are unable to determine if there has been a true increase or decrease in pesticide poisonings.